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GENERAL NOTES.

The Longitude of Honolulu.—Mr. JOHN F. HAYFORD presented to the Philosophical Society of Washington on October 10, 1903, an account of the various determinations of the longitude of Honolulu that have been made since 1555. Assuming as correct the recent determination by the telegraphic method of the difference of longitude of San Francisco and Honolulu, which gives the position of the Transit of *Venus* pier at Honolulu as $10^{\text{h}} 31^{\text{m}} 27^{\text{s}}.24$ west of Greenwich, Mr. HAYFORD gives a table showing the errors of earlier determinations. It is very interesting to note that as early as 1785 Captain COOK determined the longitude within 18^{s} , or $4\frac{1}{2}$ miles,—a high degree of accuracy when the poor construction of the chronometers of that day is taken into account,—while Captain FREYCINET in 1819 obtained a result that differs only 1^{s} , or about one quarter of a mile, from the most recent determination. All the maps of the Hawaiian Government Survey since 1874 are based on the longitude determined by Captain TUPMAN from observations of meridional transits of the Moon, occultations of stars, and zenith-distances of the Moon's upper and lower limbs, combined with those of well-known stars near the Moon. This value is $10^{\text{h}} 31^{\text{m}} 27^{\text{s}}.2$, agreeing with the new determination to the nearest tenth of a second.

The Planet Mars.—Additional contributions to the extensive literature on the canals of *Mars* are made by Messrs. E. M. ANTONIADI and E. W. MAUNDER in the November number of *Knowledge*. Instead of giving us new markings and canals, it is rather the object of these gentlemen to explain away some that now mark the maps of *Mars*. M. ANTONIADI's conclusion seems to be that the so-called canals are not a simple phenomenon, either objective or subjective. It is his belief that these markings are, in part at least, real, but in greater part are due to physiological causes. In a letter to the *English Mechanic*, quoted by Mr. MAUNDER, M. ANTONIADI sums up the 'canal-impression' under five heads:—

“(a) Entirely physiological markings, like those seen by Mr. LOWELL on other planets, by myself on *Mars*, and by Mr. LANE on his artificial disks.

“(b) Subjective lines, generated by the topographical details.

“(c) Edges of physiological half-tones, begotten by contrast.

“(d) Edges of objective half-tones, arising from the same reason; and

“(e) Incontestably real canals, which, were we to see *Mars* better, would resolve themselves into groups of knotted or unevenly shaded areas.”

Mr. MAUNDER describes in some detail, and with illustrations, the results of experiments made by him with a class of twenty boys, about twelve to fourteen years old, who were seated in four or five rows at different distances from a carefully lighted diagram, which they were told to copy. The diagram was reproduced from some published drawing of *Mars*, but in nearly every experiment the canals were omitted. In general, any boy was used in only one experiment, though a few drew the same diagram twice, at different distances.

“The general result was striking. In several of these experiments nearly all the boys drew ‘canals’ on their copies, though there were none on the original from which they were copying. And these ‘canals’ were not placed at random; they were in just the very places where canals are seen in the charts of SCHIAPARELLI and LOWELL.”

We cannot quote at greater length from this interesting article, but must refer our readers to the original. We may add that, as Mr. MAUNDER says, “the most interesting feature with regard to the entire discussion is the tendency of the ablest and most favorably circumstanced observers to see the chief canals no longer as straight uniform lines, but as close sequences of spots, as if an approach had been made to their complete resolution.”

A stained-glass window, to commemorate the long connection of Dr. JOHN P. NICHOL, Professor of Astronomy, and his family with the University of Glasgow, has been placed in the Bute Hall of the college. At the top of the new window appears URANIA, the heavenly muse. In the smaller lights around her are various objects familiar to astronomers. The four figures in the top division of the window represent COPERNICUS, GALILEO, KEPLER, and NEWTON, the four great founders of modern astronomy. The late professor wrote numerous and

delightful books on "The Solar System," "The Planetary System," and "The Architecture of the Heavens," and these works stimulated throughout the English-speaking world an extraordinary interest in the subject.

ANDREW GRIEG.

Those who are interested in the question whether long-period weather forecasting will ever become practicable will find in *Science* for November 13, 1903, an interesting article by Sir NORMAN LOCKYER, entitled "Simultaneous Solar and Terrestrial Changes." The paper is really a concise historical account of the progress made in the study of such solar phenomena as the periodicity of the spots and the distribution of the prominences; and of the influence of such solar disturbances upon magnetic and meteorological conditions on the Earth.

From *Science* we learn that the new observatory of Amherst College has been so far completed that regular observations are in progress. The sum of \$100,000 has been raised for building purposes and for endowment.

Another new observatory that is well equipped for research as well as for instruction is the Washburn College Observatory, Topeka, Kansas, which was dedicated on September 18, 1903, Professor C. L. DOOLITTLE, of the Flower Observatory, delivering the address. The equipment includes an 11½-inch refractor and a 5-inch photographic doublet, as well as a number of smaller instruments. It is designed to add other instruments (in particular, a meridian-circle and a spectroscopic outfit) and a working astronomical library.

Professor DOOLITTLE's address, just mentioned, is published in full in the November number of *Popular Astronomy*. It is entitled "Some Observatories and Observers, Past and Present," and gives an interesting account of the incidents and efforts that led to the establishment of some of the best-known observatories in Europe as well as of the development of astronomy in this country.

Autobiography of Professor SIMON NEWCOMB.—Under the title “The Reminiscences of an Astronomer,” HOUGHTON, MIFFLIN & Co. have recently published an autobiography of the able and well-known astronomer, Professor SIMON NEWCOMB. This volume, modestly relating the chief events in the life of one who has been extremely influential in promoting American astronomy, makes very interesting reading. W. W. C.